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Worldwide Report

ENVIRONMENTAL QUALITY

No. 349



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WORLDWIDE REPORT
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REDUCED PCB CONTENT IN BALTIC SEEN AID TO SEALS

Helsinki HUVUDSTADSBLADET in Swedish 9 Mar 82 p 16

Article by Raymond Arvelius: "Lower PCB Content Creates Hope for Seals"

Text "Extinction of the seals in the Baltic Sea has seemed inevitable. But in the last few years the level of the environmental poison PCB has dropped by one-third in the Baltic Sea and there is hope for the seals. Above all, the situation has improved for the newborn seals." This is what Lennart Almkvist says, a researcher at the National Museum of Natural History in Sweden.

The number of gray seals in the Baltic today is only 1,000, while there were 100,000 at the beginning of the 1900's.

For a long time hunting reduced the number of seals. But now the seals are protected and the threat to the seals in the last decades has come primarily from the environmental poisons DDT and PCB. Forty percent of the females have been affected by pathological abnormalities of the uterus. Only about 20 percent of the females bear young.

Certain Indications

"The most recent analyses of fat from eggs of the common guillemot show that the PCB level has dropped by one-third," Lennart Almkvist says. "These are certain indications, since the guillemot never leaves the Baltic and feeds on herring from various stocks of herring. As of 1981, the decrease of the PCB level has been statistically proven."

The level of DDT has also dropped. Lennart Almkvist is of the opinion that it is the Helsinki convention which is showing results.

All of the Baltic countries signed the convention, and one attempts to reduce the discharge of pollution both from land and from ships.

"If the seals are sterile, that is permanent," Lennart Almkvist says. "The newborn seals are in a better position."

"They start off with half of the mother's level of poison. To that are added the poisons contained in the mother's milk and later the contents in fish."

"It is probably PCB which interferes with the reproduction of the seals. Now, PCB has been somewhat reduced in the seals."

The researchers at the National Museum examine seals which have died. And this is why it takes time before sufficiently many males, females, young and old have been examined. Besides gray seals there are also ringed seals and hump seals in the Baltic.

"It could take 10 years or 100 years before 'all' seals are healthy, and we still don't know whether such a positive development will take place," Lennart Almkvist says.

Seals and Human Beings

The sterile seals are sick, and together with veterinarians at Uppsala University the researchers of the National Museum are studying the pathological picture. One is studying all the organs in detail: the uterus, liver etc.

The hormone system is affected by PCB and the uterus has grown together.

"But proving that the coalescence is due to PCB is difficult," Lennart Almkvist says. There are about 30 different substances in PCB.

Can human beings be affected by these kinds of effects?

"The human being is part of the interplay between the organisms and the environment, and in the end the human being can also get sick," Lennart Almkvist says.

"DDT is found in mother's milk, and humans and seals are physiologically similar. Physicians are doing a number of PCB analyses of fat samples from humans, but so far too little is known."

PCB was used in industry. The paint industry, for example, mixed PCB into their paints for boat hulls in order to give the paint the right smoothness. In this way PCB was spread all over the waters.

"PCB has now been banned in Sweden for about 10 years. But PCB is spread when burned at garbage dumps. It is carried away by the air. Technology and resources in order to remove all PCB do not exist today." (FLT)

11949
CSO: 5000/2078

VICTORIAN OPPOSITION SEEKS PROBE OF VINYL CHLORIDE LEAK

Other Studies Under Way

Melbourne THE AGE in English 4 Mar 82 p 5

[Article by Peter Roberts]

[Text] The Victorian Opposition has called for a full public inquiry into the leak of vinyl chloride gas from B. F. Goodrich's Altona chemicals factory last week.

Mr Evan Walker, Labor's spokesman on environment and planning, said yesterday that an inquiry would establish the explosion risk faced by nearby factories and residential areas during the day-long emergency.

He said it should also assess the cancer risk faced by factory workers and emergency officers who inhaled vinyl chloride gas on the site.

"If we win government at the coming election, we will be holding a public inquiry," Mr Walker said. "There is too much at stake in this incident for us to just breathe a sigh of relief and allow the matter to pass."

For about seven hours on Thursday, emergency services staff worked to plug a leaking pressure tank containing 600 tonnes of vinyl chloride. It was feared that sparks could ignite the escaping gas cloud and cause an explosion.

Mr Walker said this raised a question mark over planning policies which had allowed housing areas to encroach on Altona's chemical industries. The safety of the factories in the region should be re-assessed in the light of the Goodrich accident.

He said that there had been serious chemical explosions overseas and Victoria should take the Goodrich incident as a warning. The Altona situation was more complicated than normal, as many of the factories there also store intractable industrial wastes. It is believed that chlorinated hydrocarbons, chemicals considered too hazardous to dump, are stored in drums on the Goodrich site.

Mr Walker said scientific evidence now suggested that people exposed to the gas could face a higher than normal risk of cancer in years to come. This had not been obvious last week.

"A single significant exposure (to vinyl chloride) could have an effect," Mr Walker said.

A spokesman for B. F. Goodrich said yesterday that the company had no objection to any inquiry proposed by any government. He said inquiries were already under way within the company and within the Environment Protection Authority and the Ministry for Minerals and Energy.

"It is hard to see what else a public inquiry would produce," the spokesman said. "I guess we have got to have faith in authorities such as the EPA to present their various masters with a true picture of what happened."

The EPA is investigating the release of vinyl chloride during the incident. Under general air pollution provisions of the Environment Protection Act, the company could be liable to a fine of up to \$5000.

The Minister for Minerals and Energy, Mr Crozier, said his department's hazardous materials division was considering safety question raised by the incident. He did not rule out tightening of safety procedures at Altona.

Mr Crozier said: "The Labor Party and Mr Walker are very fond of proposing inquiries into pretty well everything. I am satisfied that the facts will become known, and the report, I will be getting will be perfectly adequate."

Underestimation of Leak

Melbourne THE AGE in English 6 Mar 82 p 5

[Text]

Concentrations of vinyl chloride gas in the air were at least three times higher than it had earlier been thought during the leakage from the B. F. Goodrich Chemical plant at Altona last week.

In its official explanation of the leak, Goodrich has said that concentrations at the perimeter of the plant reached 300 parts per million (ppm).

Company spokesmen previously had said that "average concentrations" during the day-long emergency were 10 ppm, with "isolated" readings reaching 100 PPM. Monitoring devices were switched on after the gas had been leaking for about an hour.

Mr Norm Gamble, Goodrich's technical services group director, said the only potential explosive area would have been immediately around the leaking tank,

which contained 600 tonnes of vinyl chloride.

The company investigation shows that the leak occurred when three fitters were changing a three-inch vinyl chloride discharge pipe at the base of the tank. The pipe also supported the actuator of the four-inch discharge valve.

Mr Gamble said that with the support removed, the force of gravity had been enough to rotate the valve handle towards the "open" position. Several unsuccessful attempts were made to shut the valve and the plant alarm bell was sounded 30 seconds after the leak occurred.

He said the leak was controlled at 7 pm when water was successfully injected into the storage tank.

Two State Government departments are conducting inquiries into the incident.

CSO: 5000/7528

NEW DAM ROW IN NSW; PARKS ASSOCIATION IN OPPOSITION

Sydney THE SYDNEY MORNING HERALD in English 4 Mar 82 p 10

[Article by Joseph Glascott]

[Text] A hydro-electric dam versus wilderness controversy, similar to the Franklin River issue in Tasmania, has developed on the northern tablelands of NSW.

The National Parks Association protested yesterday against a proposal by the Electricity Commission for a dam and power station on the Apsley River, east of Walcha.

The executive director of the association, Mr Peter Prineas, said the commission had installed a flow meter in the river late last year. The commission also had begun work with a bulldozer to turn a rough track into an access road.

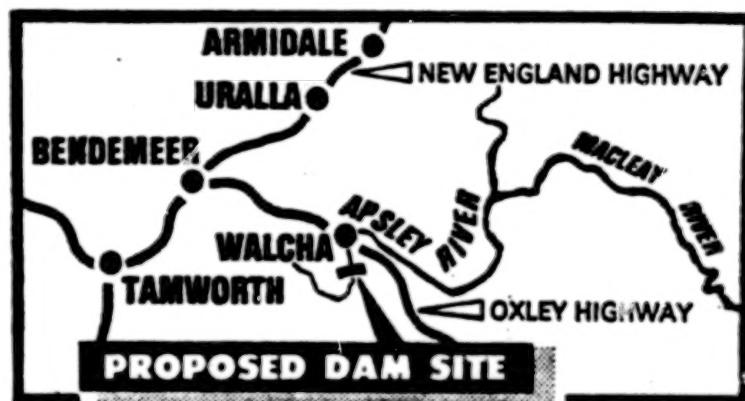
He said the road work ceased when the association threatened legal action because the commission had not prepared an environmental impact statement on damage to the wilderness.

Mr Prineas said the Apsley, a tributary of the Macleay, was a wild, scenic river in rugged gorge country on the edge of the New England tableland, east of Walcha and Armidale.

The Apsley River valley, and up to 70,000 hectares around it, had been identified in surveys as the third largest wilderness area in NSW.

The National Parks and Wildlife Service had been considering a proposal for a national park in the region for a number of years.

The service had been frustrated in its efforts to acquire land for a



park, because it was required to announce proposed land purchases to give other Government departments an opportunity to object.

The Department of Mineral Resources had raised objections on the grounds that the valley could contain minerals.

The Electricity Commission, with no such requirement, had been able to buy property in the valley, he said.

Mr Prineas said a dam would flood the valley and destroy the wilderness values of the region.

"The proposed dam does not make economic sense," he said. "It is planned to use power to pump water from the Apsley River dam up to a storage on the tablelands, and then drop it down again to produce power in the State's peak demand periods.

"Overall the project would probably be a net user of power.

"I suspect that another main

reason for the dam is to pump water up into the Gunnedah basin to supply the proposed new coal mine developments in that district."

A spokesman for the Electricity Commission said the Snowy Mountains Engineering Corporation had been engaged to carry out feasibility studies for a dam and hydro power station on the Apsley.

A decision would not be made about the project until these studies were completed at the end of this year.

At that stage the commission would prepare an environmental impact statement. Already a team from New England University had been commissioned to carry out a survey of flora and fauna in the valley.

The proposed power station would produce about 300mw for peak period loads, and could be enlarged to provide an additional 1000mw.

URANIUM DUMP POSES DILEMMA TO NSW; SA REFUSES TO HELP

Sydney THE SYDNEY MORNING HERALD in English 4 Mar 82 p 10

[Article by Joseph Glascott]

[Text]

Efforts to remove the radioactive waste dump in Nelson Parade, Hunters Hill, appear to have defeated the State Government.

It is now thinking of leaving the dump where it is, covering it over and perhaps putting a park on top.

A spokesman for the Minister for Health, Mr Brereton, said yesterday a decision was expected soon.

The dump of 3,000 tonnes of contaminated soil has been a problem for the Government since 1976.

In that year the Health Commission discovered that the waste was giving off radon gas and gamma radiation levels which were potentially dangerous to health. The land was the site of a factory between 1910 and 1916 which extracted uranium from uranium oxide for painting luminous watch faces.

The contaminated waste is spread over six housing blocks. Three of the blocks were so contamin-

ated that the Government agreed to buy the houses and remove the soil from under them.

The Government has bought two of the houses and is still negotiating for the third.

However, attempts to find a site to which the radioactive waste could be removed have proved futile.

NSW asked South Australia where the uranium oxide was mined in the first place to take the waste back, but the SA Government refused.

Two years ago the Health Commission selected a site for the waste at Manara in the remote western districts of NSW between Broken Hill and Ivanhoe. But local graziers and Central Darling Shire Council raised strong objections and the commission was forced to drop the idea.

No decision had been reached yet on what to do, but one option was to leave the soil where it was, cover it over and provide a park on top.

Government sources said the issue was so difficult it had gone to State Cabinet for discussion.

CSO: 5000/7528

FORESTS MAY BE SAVED BY DOWNTURN IN WOODCHIP INDUSTRY

Canberra THE AUSTRALIAN in English 8 Mar 82 p 3

[Article by Jill Baker]

[Excerpt]

DEPRESSED international markets have placed a big question-mark over the future of a huge woodchip industry proposed for eastern Victoria and have reopened the acrimonious debate between conservationists and the Government.

Some sawmillers and pulp companies now fear the Victorian Government has waited too long to approve projects earmarked for East Gippsland.

And conservation groups, which have been fighting a fierce war of words with the State Minister for Forests, Mr Austin, believe the economic downturn offers an opportunity for Victoria's forests to be saved.

Mr Austin strongly denied both claims at the weekend, claiming the Victorian community was "being deliberately misled into believing that pulpwood harvesting is a threat to forests".

The director of the Conservation Council of Victoria, Mr Peter Browne, said yesterday the Forests Commission had been so keen to promote the industry that it had "ignored the fact that there was no market for the woodchips".

"In the present economic climate the Victorian Government is understandably keen to see more growth and jobs but surely if it is concerned to get Victoria back on the road it should encourage industries whose viability is unquestioned," he said.

The Native Forests Action Council said after a public meeting on woodchipping in Bairnsdale that the Forests

Commission had failed to show the need for the woodchipping scheme or adequately refute grave fears on the environmental impact of the scheme.

Producers strongly support the extension of the 12-month trial timber scheme into full-scale production but admit difficulty in setting up a new operation when market conditions are depressed.

CSO: 5000/7528

AUSTRALIA

BRIEFS

RAINFOREST PRESERVATION--The National Trust has classified the Washpool forest west of Grafton and the Hastings Valley forests west of Wauchope. The trust classification, which means it thinks the areas should be preserved, puts more pressure on the State Government to prevent logging in the forests. A State Cabinet sub-committee under the chairmanship of the Premier, Mr Wran, is considering the future of Washpool, Hastings Valley, Terania Creek and other rainforests of the State. Sawmillers are demanding the right to log in the forests while conservationists are calling for them to be preserved. The National Trust says of Washpool: The area contains the largest remaining undisturbed rainforest in NSW and the largest intact coachwood rainforest in Australia. Of the Hastings Valley, it says: "The area contains large tracts of rainforest and includes the largest unlogged Antarctic Beech forests in NSW. [Sydney THE SYDNEY MORNING HERALD in English 4 Mar 82 p 11]

CSO: 5000/7528

GERMAN DEMOCRATIC REPUBLIC

STRICTER LAWS, SANCTIONS ADVOCATED TO PROTECT ENVIRONMENT

West German Commentary

Bonn IWE-TAGESDIENST in German No 42, 17 Mar 82 p 2

[Report from Berlin: "GDR Economy Is to Be Compelled to Protect the Environment." A translation of the Potsdam-Babelsberg STAAT UND RECHT article cited below follows this commentary]

[Text] The East Berlin journal STAAT UND RECHT [No 3, 1982] has asked that the GDR's economic laws more strongly take account of environmental protection. One task of economic laws was to contribute to the development of production relations in conformity with ecological principles. Current regulations only offered "initial handles" for it and were "effective only in part." As a priority task the journal mentioned an influence exercised by economic laws on shaping an environmentally acceptable production process. For developing optimum solutions, one should have to introduce, in particular, technologies that save raw materials and keep down or come without waste products and emissions. This East Berlin technical journal pointed out that a "steadily growing outlay of finances" was going to be necessary for environmental protection in the future. That circumstance was extremely important for economic law considerations because the enterprises were not sufficiently interested in environmental protection on account of the expenses involved. As ecological requirements of today normally became the economic prerequisites for tomorrow, they called for a prescient consideration and planned realization. That could only be done through overall social planning and an economic management which should have to be much refined by means of economic law.

Greater Financial Outlays Required

Potsdam-Babelsberg STAAT UND RECHT in German Vol 37 No 3, Mar 82 (signed to press 21 Jan 82) pp 240-249

[Article by Dr Sigrid Voss, Bruno Leuschner College for Economics, East Berlin: "More Intensive Use of Natural Resources and the Formulation of Appropriate Economic Laws"]

[Text] As any other form of social development, law also is always determined objectively and by a historic aspect. Through requirements evolving for new rules of

law, basic theoretical questions are always raised regarding their being integrated with already extant traditional branches of law or new ones taking shape. Right now, that becomes most evident for the legal handles to be applied to the relations between man and the environment because this involves problems that are much intertwined and universal, as they affect the public activity of man on the whole. As an ecological view always suggests complex processes, the norms of public conduct to be governed by law likewise are highly complex. This means that a great number of legal norms--frequently of diverse branches of law--must absorb and substantively tie together partial aspects or programs of an all-inclusive ecological mode of behavior. That also is of importance for the further development of already established branches of law, including economic law.

Whereas up to now economic law considerations only picked up individual matters and things were dealt with point by point,¹ what from now on matters more is to explore more deeply and systematically under which prerequisites, to what extent and in what way the shaping of man's relation with his environment also becomes approachable through legal regulations. This is not meant as an alternative for the newly emerging complex legal field or branch of land management. The need for economic law considerations rather follows from the developmental conditions of the regulatory subject of socialist economic law itself and is indispensable for its becoming more effective in social practice. We must therefore clarify not only the possibilities but also the limits of economic law enactments in resorting to the natural resources, which includes the protection they need.

I

As the 26th CPSU Congress and the 10th SED Congress unanimously affirmed, a better use of natural resources is both an objective requirement and an integrated process in our intensively expanded socialist economic reproduction. Economic requirements have to be derived from the perspective on overall social developmental goals, priority being given to socialist society's social requirements. Inherent in the socialist social order is that man increasingly proceeds toward deliberately steering not only his own development, but also the forces of nature outside of him, since the realm of his actual freedom can only begin when he himself directs, regulates and controls the development of society as of the forces of nature.² Society's productive metabolism must be regarded as the main handle for economic law regulations, even if also through it the preconditions are created for man's individual-consumptive metabolism, in that the qualitative condition of our natural environment that is needed for it stays intact.³ Consequently, all legal regulations are aimed not only at the protection of the natural environment but simultaneously--often even primarily--at the protection of human life and health. Law in its entirety must help organize the societal or social modes of conduct conducive to ecological requirements. These requirements are often referred to by the concept of the so-called ecologization of law.⁴

Under those prerequisites it also is a task of economic law to contribute to the shaping of production relations in conformity with ecological principles. This means that economic law systematically has to shape the productive appropriation of nature in such a way that simultaneously with the reproduction of natural resources one will combine their ever more rational utilization by confining or avoiding detriments to the environment, such as solid, liquid, gaseous, energy, acoustic and thermal stress.

This, from the vantage point of economic law, affects the relations of planning, cooperation and the immediate economic activity of the economic units alike. Both the natural resources in their entirety (mineral and soil resources, the soil itself, water, air; biological resources, i.e. the fauna and flora) and the natural environment as a whole enter the regulatory field of economic law. This, however, raises diverse legal regulation requirements and questions of demarcation from other legal branches and fields. They call for diversified determinations according to the type and condition of the natural resources and the repercussions caused thereby to the natural resources reserves and the reproductivity and the reproduction behavior of the various natural resources within their given territorial frame of reference.

All types of resources again are themselves multilayered in structure. Among the mineral resources, e.g., there are many types, apart from exceptions, that cannot be reproduced. The need the various natural resources have for legal protection also greatly depends on their specific economic importance, i.e., the present and future chances for using them, the volume of natural resources deposits and the possibilities for their natural reproduction, and their position within the system of all other natural resources. It must be kept in mind that natural resources, when they are lost from the natural context even though they continue to be naturally relevant, enter the economic raw materials cycle as primary or secondary raw materials. As land management legislation is mainly concerned with the protection of the natural resources in their natural frame of reference, a significant field opens up for economic law regulations. In this, partial processes as such in the appropriation of nature (e.g. mining or water management) or in recycling or in the reproduction process (e.g. reused material or forestry) may take on a production process of their own. To the extent that this amounts to industrially organized production, it in any case is largely subject to economic laws, even if at times in a modified manner. As the appropriation and reproduction of nature mainly takes place, however, within the scope of production activity, economic laws in their totality are affected by environmental problems, even if not all environmental problems arising in the field of economic activity solely fall under economic law. That circumstance is caused also by the mechanism for economic laws, for which the existence and development of social and collective economic interests have to be regarded as essential. For the sake of greater differentiation among the legal branches, these problems have been discussed repeatedly in the past.⁵ There still are differences of opinion. Even so, in principle one must proceed from that economic law embraces the complicated motile mechanism of societal and collective economic interests. By realizing their collective economic interests, the economic units also realize their societal interests. Yet the goals of society and of the economic units cannot always be identical because they differ from each other due to the character of the reproduction process itself, so that their goals differ in their order of rank.⁶ Societal interests always must aim at providing an optimum distribution and utilization of the available natural and societal resources. As they in any given period may become scarce resources, interests contrary to those of specific economic units certainly may result--which Radajew has called interest cleavage. It becomes increasingly necessary to safeguard the natural conditions when labor productivity rises, which requires constantly increasing financial outlays. That fact is of extraordinary importance for economic law considerations. Marx himself has pointed out that "a change in natural circumstances" must consciously be taken account of.⁷ That also applies particularly to socialist production conditions. As the consideration for the natural conditions of social labor often involves future basic lines of development, economic advance leads are

necessary for developing the productive forces and for the social division of labor on the overall societal scope. Ecological requirements of today as a rule become economic prerequisites of tomorrow. They therefore call for prescient consideration and planned realization. As the collective economic interests of the economic units are not directed at them to the same extent, the conditions for a planned structuring of the commodity-money relations consequently become, not last, more complicated and call for a great deal of overall social central planning and for economic management that must be much refined by means of economic law.

The question keeps cropping up in this connection as to how far the solving of environmental problems is now already approachable from the vantage point of economic interests. All these problems are multilayered and complicated and are based on ideas of an all-inclusive economizing of the man-environment relations after an assessment of the natural resources. Present-day solutions therefore represent none but the first beginnings for a future economic mechanism, such as fees for natural resources (dues for the use of soil and water) and certain forms of economic balancing or material sanctions (such as payments for dust, exhaust or sewage), which shows no intrinsic cohesiveness as yet and becomes effective only in part. In spite of that, environmental processes should already now be brought into the regulatory domain of economic law. This possibility follows mainly from the planned structuring of the socialist commodity-money equation and includes also the necessity for economic redistribution processes on the overall societal scale. Furthermore, it is no longer impossible today to link the intrinsic movement of a chief economic process so much with fulfilling environmentally relevant objectives that implementing overall societal reproduction will also include the implementation of environmentally relevant requirements (e.g. quality-related or a materials economy development of products or production processes). Under that aspect, while organizing economic law relations, in principle thought should be given to the possibilities for setting down both rights and duties, yet one should in principle avoid any consideration that relates exclusively to setting down only duties. Shaping an economic mechanism invariably raises the question to what extent extant economic interests present handles for subjective rights and duties and cause quite definite structures. For obtaining effective legal arrangements, they cannot be set down at will because their effectiveness always depends on objective presuppositions. Under certain circumstances, therefore, even in environmentally relevant relations the granting of rights may become the more efficient method for enacting laws. Alekse'ev, e.g., holds that law must erect no barrier between man and nature, wherefore the setting down of duties, especially in the form of proscriptions, limitations and accountabilities, always ought to come second. And that is the reason why economic units, e.g., may in a most differentiated manner, be granted the right to use nature or specific natural resources. It may be authorized in general, granted in individual cases, and even be restricted in its exercise.⁸ Already we find in the business of law special laws relating to the use of natural resources which, from the vantage point of economic law, can possibly be extended and generalized, such as the right to survey, extract and store mineral resources or the right to the use of water.

Increasing practical importance ought to attach also to the right to deposit potential secondary raw materials and another right, closely linked with site utilization, to use the natural resources of the territorial resources associations. The exercise of rights can then be linked with the fulfillment of duties in such a way that the ways and means of exercising it also get more specifically defined.

II

The crucial starting point for economic laws is the planning and balancing process. The planned handling of a more intensive use of the natural resources cannot be accomplished merely by planning regulations on details, such as environmental protection regulations, but calls for planning law as a whole. This, therefore, has both a general and a special aspect, as its effectiveness is determined by the level of planning regulations as well as by integrating particular environmental requirements with the general planning process regulations. Both aspects alike need still to be developed today. The further extension of planning regulations thus must be aimed primarily at refining planning decisions in consideration of pertinent requirements. This should find its expression in a greater complexity, correlation and balancing of planning and balancing decisions that would also include the requirements for a more intensive utilization of the environment. Irrespective of branch and territorial boundaries in effect, we have to proceed toward an ever more complex planning and balancing of the natural resources. From the economic vantage point, the optimum structuring of the man-nature equation finds its concrete expression in balancing needs with resources. The balance responsibility of the balancing organs therefore must be aimed ever more extensively at structurally organizing and utilizing the natural resources available. This can, with respect to the future, not only aim at producing conformity between production output and needs but should create ever more comprehensively a congruence between natural resources and production yields and needs. The whole process of establishing and evaluating needs must be handled by law in such a way that economically acceptable needs may arise only on the basis of the natural resources we actually have (including possible imports).

Under that aspect, discriminating legal instruments have to exercise a need-control influence, such as by balance shares for primary and secondary raw materials, licenses and restrictions for the use of natural resources and materials, standards, normatives and norms. The balancing of primary and secondary raw material deposits and the authorization for a harmless removal of waste products must more and more be handled as a unified and streamlined decision process, even if that in part has to be brought about through a division of labor. Essential steps in that direction have already been taken by the balancing order decree of 15 November 1979 and the new decree on the use of secondary raw materials, of 11 December 1980.⁹ And still we shall need in the future more definite structures for rights and duties that should at equal measure relate to the division-of-labor cooperation of the balancing organs, the fields that initiate, receive and recycle secondary raw materials and the local state organs and other organs (such as special collection organs like the VEB combine for secondary raw material utilization or the metal reprocessing VEB combine). Especially the laws that have to do with the reuse of secondary raw materials need to be further developed and extended in several respects. That must not be delayed to the reutilization process but must start in the preceding production processes or levels because they, due to their structuring the use of primary raw materials, also largely control the availability and structure of the secondary raw materials. In the balancing process itself, it becomes ever more important to come up with qualitative criteria along with the quantitative ones. When primary raw materials are requested, information should be added to it about the reuse of secondary raw materials coming off the use of the primary ones.

The responsibility given the prime producers for the recycling of their raw material as set down in Article 7 of the decree on the extensive use of secondary raw material requires further stipulations for concrete right and duty structures, which mainly have to be applied to the planned organization of scientific-technical progress, the investment activity, the statistical and use-value analysis of available secondary raw materials, and the cooperation among enterprises.

Here, in terms of legislation, the potential reprocessing areas should be more clearly distinguished from the prime user or output areas, because they need not be identical. All laws should more resolutely seek new fields for the use of secondary raw materials. The situation at present is that neither local state organs (e.g. the bezirk councils, the environmental protection departments and water management) nor the balancing organs or the prime users that make secondary raw materials available have a legally secured opportunity to issue reuse allocations and balancing leads or conclude contracts. That is detrimental especially when it involves secondary raw materials that were not yet allocated balancewise or are new or become available in small volumes only. Granting licenses for the harmless removal of waste products should in substance be more tied up with the balancing process and be differentiated from the temporary storage of secondary raw materials to be reused later. This opens an entirely new field for further regulations, not only in economic law but also in other branches of law, such as land management and land and administrative law. But this exactly then also greatly controls the need for the correlation of various branches of law.

Societal complexities must not necessarily lead to the formation of a complex branch of law--as is often assumed--but can also lead to complex efforts by several branches of law, through entwining, via facts of law, the legal competencies of various legal branches. Forms of economic law, e.g. planning or balancing decisions, can also become facts of law in issuing administrative measures; they, in turn, can become facts of law in establishing or developing economic law relations (e.g. as licenses or allocations). Such linkages of the decision-making process must definitely be given attention by legislation. That is to say, the effect of forms of administrative law as facts of law must, e.g., be anticipated as a matter of course within the scope of economic laws and be legally more closely defined. That way alone can we improve the effectiveness of socialist law as such.

III

While not yet carried through in all theoretical detail, economic laws far transcend their legal authority over organizational, planning and cooperation relations and also embrace the immediate process of economic activity. Thus far, one mainly conceived of the influence laws may bring to bear on keeping commodities up to standards but not on dealing with the production process per se. Under the conditions of the scientific-technical revolution, the link between economics and technology must be given still more attention and be opened to the influence of law in terms of a more comprehensive connection between the ecology, the economy and technology. Technology stands out in this regard because, "its destination being directed at the needs" of man, it is "aimed in its material starting point at the natural environment and its resources," wherefore it constitutes in this sense a "man-nature equation derived from the interaction between the appropriation and the control of nature."¹⁰ According to Marx, technology discloses man's active attitude toward

nature.¹¹ That is why economic laws also must affect an environmentally appropriate handling of the production process. For developing optimal solutions, ecological considerations should also be taken into account and one should introduce in particular technologies that save natural resources and produce no or only few waste products and emissions.

That is normally accomplished, not by bringing laws directly to bear on applied technologies, but by a complex of laws already effective in planning. Here the qualitative development of means of production or production systems is already of essential and transcending character. As quality applies however only to production technique aspects and is determined in view of preceding production processes, applied technology aspects within the scope of the technological process require special attention. Thus it is also up to the economic laws to make a considerable contribution to enforcing economic requirements in the use of natural resources. For reducing the total of natural resources used and diminishing the stress on the environment, the following requirements arise:

- enhanced production refinement,
- comprehensive use of raw materials,
- setting up integrated material cycles,
- material substitutions, and
- recycling secondary raw materials.

The influence laws may bring to bear mainly appear in the forms of standards, normatives and norms, though they often take effect within an aggregate of more extended legal forms, such as governmental utilization provisions, precepts, prescriptions, authorizations and licenses. The multiformity of current practice is mainly due to the lack of a generalization capacity, for ecological, economic and technical reasons, even though especially the ecological requirements suggest that it is increasingly necessary to objectify the matters on which decisions have to be made. This fact has already found its legal expression in the seventh implementation regulation for the standardization decree,¹² which deals with the standardization of the demands to ensure socialist land management and environmental protection and the gradual construction of an integrated complex of standards. The limits to which one can standardize are, however, set by the already extant possibilities for generalizing such requirements and are in flux, compared with usage norms. Usage norms, compared with standards, are constantly developing legal forms of importance in their own right, though they can also be put into effect via standards or plan decisions. For the sake of economic laws, they should thus be given more attention and more of a legal authority.

Thus the influence brought to bear by economic laws on keeping production processes in line with environmental considerations can be brought about by various kinds of usage norms pertaining to the extraction, utilization, conversion, stress and recycling of natural resources and to their being lost. In analogy with forming an integrated system of standards, one should gradually also start designing a complex and uniform system for usage norms and norms. As this amounts to a system that must closely correspond to plan parameters and standards, the integration aspects also should be given more attention. Ultimately, the design of plan parameters, standards, usage norms and norms can come only out of uniform ecological requirements, even if their place values differ within the overall economic legal system.

Developing one of these areas then also raises qualitative demands for the further extension of others. Moreover, settling matters in terms of usage norms crosses over into other fields; it contributes not only to keeping the production process in line with environmental considerations.

FOOTNOTES

1. Cf., *inter alia*, R. Scheibe and S. Voss, "Quality Agreements in the Economic Contract--A Means for Enforcing Environmental Protection," *WIRTSCHAFTSRECHT*, 1978, pp 94 ff; "Drawing up Economic Contracts on Scientific-technical Achievements and Enforcing Environmental Protection," *Ibid.*, 1979, p 99; H. Bartz, R. Scheibe and S. Voss, "Enforcing the Demands of Socialist Land Management in Preparing and Placing Investments," *Ibid.*, 1980, No 4, Supplement.
2. Cf. G. S. Gudoshnik, "Wissenschaftlich-technischer Fortschritt. Wesen, grundlegende Tendenzen" (Scientific-technical Progress--Its Essence and Basic Trends), Berlin, 1974, p 276.
3. Cf. "Umweltgestaltung und Oekonomie der Naturressourcen" (Environmental Planning and the Natural Resources Economy), Berlin, 1979, pp 36 ff.
4. Cf., *inter alia*, V. V. Petrov, "Legal Problems in Ecology" (in Russian), Moscow, 1980, p 126.
5. Cf. especially W. Panzer, "Theoretical Aspects of Economic Legal Relations," *STAAT UND RECHT*, 1979, p 649; "On Legal Rules for Economic Relations in the Developed Socialist Society," *Ibid.*, 1980, pp 911 ff.
6. Cf. W. W. Radajew, "Oekonomische Interessen im Sozialismus" (Economic Interests in Socialism). Berlin, 1974, p 273.
7. Cf. K. Marx and F. Engels, "Werke" (Works), Vol 23, Berlin, 1962, p 536.
8. Cf. S. S. Alekse'ev, "Law and Our Life" (in Russian), Moscow, 1978.
9. Cf. especially Article 2 and 5 in "VO ueber die Material-, Ausruestungs- und Konsumergueterbilanzierung--Bilanzierungsverordnung--15 November 1979," *GBL*, Part I, 1980, p 1; "VO zur umfassenden Nutzung von Sekundaerrohstoffen, 11 December 1980," *Ibid.*, 1981, p 23.
10. Cf. "Umweltgestaltung," *op. cit.*, p 59.
11. Cf. K. Marx and F. Engels, "Werke," Vol 23, p 393.
12. Cf. "7. DB zur Standardisierungsverordnung--Standardisierung von Forderungen zur Gewaehrleistung der sozialistischen Landeskultur und des Umweltschutzes, 27 November 1975," *GBL*, Part I, p 763.

Use of Fines, Imprisonment

East Berlin NEUE JUSTIZ in German Vol 35 No 10, Oct 81 pp 442-446

[Article by Dr Heinz Duft, sector chief, Ministry of Justice; and Prof Dr Hans Weber, head, faculty for criminal law and law of criminal procedure, GDR Academy of Political Science and Jurisprudence: "Prevention and Control of Violations of Environmental Laws"]

[Text] A successful continuation of our policy, aimed at the well-being of the people, as persuasively reiterated at the 10th SED Congress, also includes the protection, preservation and sensible use of nature and its resources. Clear requirements are issued about that in the 10th SED Congress directive on the five-year plan for the development of the GDR economy, 1981-1985: Measures have to be continued according to plan for keeping our water clean, using and protecting our soil, keeping the air clean, reducing noise and eliminating and using refuse and industrial waste products, and environmental conditions have to be improved, particularly in working class centers and conurbations.

Decent human conditions and a sensible use and protection of the environment from dangers and detriments are part of our shaping our working and living conditions. It is important to use all the advantages of socialist society in protecting the environment from dangers and detriments in accordance with the social, especially the economic, chances we have.

An effective protection of our natural environment is up to all of socialist society, particularly to the socialist state. That is something the chiefs of work collectives in the combines and enterprises have come to understand increasingly better in recent years, for which reason they have turned a strict obedience to the regulations issued about it into an integral part of their activities seeking exemplary order, cleanliness and discipline.² The local people's representations and their councils likewise have, in their resolutions and in the municipal and communal regulations for citizens and enterprises, set down rules, e.g., on refuse disposal, tree maintenance, waterways and recreational sites. All this indicates the demands developing in this area under our socialist conditions; and it also makes clear what our real chances are for ensuring their being implemented. On this basis, the citizens can take part in effective supervision by the local state organs and their institutions and thus consolidate our legality.³ We must not lose sight of the fact, however, that along with these social activities seeking to abide by and enforce legal obligations for the protection of the environment, rather large scientific-technical achievements and economic outlays are necessary, to make the protective measures truly effective. That calls in part for extensive investments, among other things for technologies and techniques which meet the requirements of environmental protection, for inspecting and maintaining pleasure-grounds, and for flood relief and water protection.

It greatly depends on a sensible combination between these creative human activities and economic efforts for us to be able to accomplish in the future high economic performance improvements while further developing the protection of the environment and of the life and health of men in our socialist society.

The Legal Protection of the Environment in the International Debate

International cooperation is needed ever more urgently for the protection of the environment. This thus is an important field in international relations, an integral part of socialist economic integration by the states in the socialist community as well as in the peaceful coexistence framework among states with differing social orders.

On the various levels and fields of law, an elaboration of international law principles is being sought, meant to be administered within the legal systems of the various states. Also the 12th International Criminal Law Congress of the International Criminal Law Association (AIDP), in September 1979 in Hamburg, among other things, dealt with issues of criminal law protection for the environment; one of the things demanded there was a better coordination and cooperation on the international level. What the discussions at that congress made clear, however, was that the two social systems have completely different environmental protection problems. In part the debate became an indictment of the capitalist monopolies which, out of profit greed, despoil the natural resources and thus harm considerably the life of working men (e.g. by the deforestation of whole forests in Latin America).

In conformity with the differences between the social systems, the demands or expectations of a legal protection of the environment also differ very much. Even so, the international congress did adopt a joint resolution in which the following basic principles of environmental protection were formulated:

- Major attention goes to measures not subject to criminal law but mainly to administrative and civil law.
- Above and beyond the protection of life and health, at least the water, the air and the ground have to be recognized as subject to law and so be protected by criminal law.
- Criminal law must not confine itself to traditional facts of the case, but special provisions must be introduced or further developed for environmental protection.
- Appropriate measures must facilitate the prevention, disclosure and prosecution of environmental crimes. An important chance for that lies in encouraging a public atmosphere of intolerance to any form of violations of environmental laws, so that they may be prevented or controlled.
- International principles, norms and minimum tolerance limits are to be worked out for the future.

The GDR's legal system fully conforms to those requirements. In particular, it is marked by the comprehensive legal protection of the environment ensured by the co-operation among various fields of law. Along with an effectively organized and ever improving prevention of environmental damage, the legal responsibility for environmental hazards brought about is set down with great discrimination. The various types of legal responsibility are correlated with one another.

Differentiated Legal Measures for the Violation of Environmental Laws

Proceeding from a principle in our Constitution (Article 15), through the law on a planned handling of socialist land management in the GDR--the land management law--of 14 May 1970 (GBL, Part I, No 12, p 67), a public law that is uniform and all-inclusive, and a matter of principle, has been enacted. Articles 7 through 9 set

down the tasks of the enterprises and their responsibility for reducing or eliminating production-conditioned environmental hazards. The enterprises and their managerial organs have to see to it that the land and its resources are sensibly and rationally used. It is their responsibility that through their activities hazards to the natural environment are excluded as much as possible, necessary land management measures are taken, and all this is given attention even at the time that long-range plans are drawn up.

Special importance, by that token, also attaches to the local people's representations and their organs (Articles 2, section 3; 4, section 2 through 4; 62, section 3 of GoEV). In their status reports, the enterprises are under the obligation to account to those organs for their land management measures. They systematically have to apply the most advanced science and technology data and develop and use procedures and installations that as much as possible exclude harmful effects and burdens on the people and their environment. Because of the constantly deepening cooperation among the socialist states within the framework of socialist economic integration, the state and economic organs and enterprises are under the obligation to make full use of the experiences and scientific data of the Soviet Union and the other socialist countries and develop close cooperation in socialist land management. As set down in the land management law, in a number of implementation decrees and other law regulations, further environmental protection obligations have been made more specific, for instance, for protecting the fauna and flora and the landscape, keeping towns and communities clean, noise protection, and keeping air, water and the ground clean.⁴

If citizens or enterprises, out of indifference, negligence, recklessness or similar attitudes, violate the duties set down in the land management law or its implementation regulations or other legal provisions, differentiated governmental measures will enforce dutiful conduct. Depending on what such duty violations amount to, the following reprisals to be enforced through governmental coercion are possible:

- The authorization of the local councils and other governmental jurisdictions to levy fines on enterprises and citizens and demand compensation for excess expenditures and damage caused by duty violations (Article 38, section 1, LKG);
- The bezirk councils' levying dust and exhaust dues when emission limits are exceeded (Article 18, section 1 of the 5th DVO for the LKG);⁵
- damage payments from enterprises (re Article 1, section 2 of the 5th DVO for the LKG) which pollute the air (through emission), and from other enterprises under the conditions as of Article 19, section 1 of the 5th DVO for the LKG;
- The obligation by those who cause emissions to pay damage in settlement of economic injuries or a liability for damages for agricultural and forestry enterprises (Articles 13, section 2 and 19, section 2 of the 5th DVO for the LKG, together with Articles 17 and 18 of the ground utilization decree);
- damage payments to compensate for excess expenditures vis-a-vis towns and communities when allowable limits are exceeded and emissions cause such excess expenditures (Articles 19, section 1, and 12, sections 4 and 5 of the 5th DVO for the LKG, and Article 5, section 1, LKG);
- obligations to avoid harmful effects (emissions) or damage payments or the obligation for damage payments to citizens whose personal property was affected by air pollution (Articles 329, 323 ff., ZGB)); and
- disciplinary fines and measures against managers and associates of enterprises causing emissions, if they are guilty of having violated their legal obligations (e.g. Articles 21 and 22 of the 5th DVO for the LKG).

Furthermore, there are still other law regulations by which legal liabilities are framed as public order violations when they amount to discipline violations and interfere with state management or with the development of socialist communal life yet do not seriously infringe the interests of socialist society and each individual citizen, for which reason they are no criminal acts (as, e.g., in accordance with Article 23 of the first DVO for the LKG; Article 16 of the 3rd DVO for the LKG; Articles 14 and 15 of the 4th DVO for the LKG; Article 21 of the 5th DVO for the LKG; Article 11 of the atomic energy law; Article 35 a in the radiation protection decree; Article 45 of the water law or Article 14 of the poison law).

Through the second criminal law amendment of 7 April 1977 (GBL, Part I, No 10, p 100), with inserting Articles 191 a and 191 b in the Penal Code, the legal protection of the environment also has been strengthened.

The complex laws for environmental protection demonstrate that the GDR's legal system meets the requirements for comprehensive environmental protection. It ensures the use of the environment for the benefit of men and prevents environmental hazards. Our law concretely sets down the basic lines for environmental protection and the rights and duties in this field of citizens, managers, and state organs. Ensured also is the supervision on meeting these obligations (by state and social control organs and a discriminated levying of sanctions in case of law violations). These complex laws go a long way toward preventing criminal disturbances of the environment.

Criminal Law Provisions for the Environment as an Integral Part of Uniform Socialist Criminal Law

Natural resources in the GDR are largely public property, the management and planning of all public life pursue overall state and social interests, and the private profit economy is abolished. This provides important social preconditions for depriving criminal violations of the duties for the protection of the environment of any ground to stand on. Conflicts of interests, which may arise, e.g., between having the enterprises fulfil their economic objectives and the protection of the environment, are barred, or at least confined, as much as our economic possibilities allow. Thus the socioeconomic starting positions for the decreeing and the effect of penal provisions in the socialist countries are wholly different from what they are in capitalist countries, where the "search for profit and not the love for man is the elixir in the imperialist modes of thinking and conduct."⁶

To be able to effectively counter criminal acts against the environment, in the second criminal law amendment legal protection from environmental hazards was uniformly and comprehensively taken care of in accordance with the now more mature social relations. Up to then, the legal protection of the environment applied only to particulars. Criminal law regulations were contained in laws outside the Penal Code, particularly in the water law of 17 April 1963. Certain violations of environmental protection could also be prosecuted as crimes against health and labor safety protection, when persons responsible for labor safety, by violating their duties to labor safety and health protection, also incurred environmental dangers (as, e.g., in case of an explosion in a chemical enterprise which released noxious substances polluting the air, the water or the ground). Acts damaging the environment also could be prosecuted as injuries to the economy in line with Articles 167 and 168 of the Penal Code. Causing the danger of disaster (Article 191 of the Penal Code) in a way also constitutes an imperiling of the environment.

This in a way limited protection no longer satisfied the demands for environmental protection raised primarily by scientific-technical progress. Entitled "causing environmental dangers," Article 191 a and b was therefore put into the Penal Code, providing for legal liability for any deliberate violations of environmental protection obligations (Article 191 a in the Penal Code) and for negligent violations of duties (Article 191 b in the Penal Code).⁷

These laws establish uniform preconditions for legal liability in causing environmental dangers. To it, all principles of unified socialist criminal law also apply. There is then no special criminal liability for this with certain special or exception rules, as had sometimes been demanded in the international debate.

Only persons, of course, can be criminally prosecuted, not enterprises, institutions or collectives.

In contrast to other kinds of legal liability or other legal sequences, environmental protection under law takes the individual liability of a person for granted. Mainly in capitalist countries there are efforts afoot to hold enterprises also accountable for environmental damage. Such proposals hide, on the one hand, an antipathy to capitalist monopolies and the large-scale environmental damage they cause and, on the other hand, the mistrust in the will and ability of capitalist criminal justice effectively and rigorously to apply sanctions against the corporation bosses and their stooges. Some who are for it also intend to provide particular entrepreneurs or their agents with chances to evade their liability or take cover behind the liability of their corporations.

Socialist society knows no such reasons. Laws here provide adequate opportunities for also holding enterprises accountable for the environmental damage they cause (by having them pay damage or indemnities).

Among us, a liability exists when the offender has acted intentionally or negligently. An effective legal protection of the environment does not require abandoning basic criminal law principles (such as guilt or causality) or transforming criminal liability into an object of contingency. Furthermore, the sanctions threatening for crimes against environmental protection are all provided for in the Penal Code, and so there are no particular penalties for it.

Crimes Against Environmental Protection--Concrete Jeopardy Crimes

Causing environmental danger is among the crimes against general security. Such jeopardy crimes cause conditions of general danger the curtailing and course of which is inconceivable or cannot be kept under control by the offenders. Criminal liability presupposes a common danger, i.e. an immediate imperilment of human life or health or of important property values. A common danger exists also when vital public supplies encounter considerable hazards (Article 192, Penal Code). Legal or disciplinary offenses not causing dangers of such range establish no legal liability for causing environmental danger. They may, if the facts of the case are such, be prosecuted as irregularities or become a labor law or civil code liability.

Environmental protection laws also handle the negligent responsibility for serious health damage or for causing people to die. These are special cases of negligent manslaughter or bodily injury. Legal regulations for causing environmental danger precede the general provisions on negligent manslaughter or bodily injury (Articles 114 and 118, Penal Code). This arrangement underscores that the accountability for environmental protection includes that for human life and health.

The Scope and Shape of Environmental Protection Under Law

Protected under criminal law are the ground, the water and the air, from pollution by noxious substances or pathogenic agents. This means that noise, e.g., does not fall under these provisions but may in a given case entail civil law liability in accordance with Articles 328 and 329 in the Civil Code. That would then concretely show up, e.g., in civil suits pressing for the elimination of noise by air conditioning devices, grinding devices or defective mufflers on tractors. Similar suits could also be brought for dust and smell emissions and air pollution by exhaust gas causing serious harm to plants and buildings.

A case of pollution exists when noxious substances or pathogenic agents are allowed to affect the ground, the water or the air exceeding the limits of provisions on purity standards. Dirty drinking or utility water also establishes a legal liability when the extent of it causes a common danger.

Environmental protection laws are highly pertinent in this field. What one wants to accomplish mainly is that managers of agricultural enterprises and facilities, agrotechnicians and complex chiefs assume their responsibility and prevent water pollution in the first place, caused by

- silos set up inexpertly or without the necessary license from the state building inspectorate, or in violation of that organ's site specifications;
- inexpert elimination of feces (draining manure in lumps, compactly, on farm acreage and letting it run into drinking water reservoirs); or
- improper practices for dealing, storing, shipping and applying means of crop protection (special herbicides).

But laws should also prevent serious duty violations by citizens, enterprise managers, managers and associates of state or cooperative trade facilities and vacation homes, who through an inadequate installation, maintenance and supervision of seepage tanks, gross violations in the service and maintenance of oil heaters, failing to report breakdown at once, gross mistakes in the repair of water pipe damage, or in installing by-pass systems, would cause serious dangers or material damage.

About Guilt

Criminal liability is predicated on the violation of a legal or occupational responsibility. This must amount to concretely defined and accountable responsibilities relating either directly to environmental protection or to labor safety, security and fire prevention provisions which, when violated, lead to environmental danger. Negligence may, e.g., make chemicals catch fire and so much pollute the ground, the water or the air that a common danger arises. Also by the infringement of provisions on hygiene, water may get polluted. The duties violated thereby may relate directly to the laws (such as the land management law and its implementation regulations) or to an occupational activity (in managing risky production processes, e.g., or carrying out experiments and such).

Liability is not confined to a specific group of persons (such as the manager or managerial associates, for instance) but exists in every occupational responsibility to environmental protection. Yet this responsibility has to be defined concretely enough.

Liability in any given case is predicated on guilty conduct. And here one must always examine whether, in accordance with the principles for such guilty conduct, opportunities for proper social conduct existed. No one can be held liable who caused an environmental danger by a faulty handling of certain chemical substances with which he was not familiar and the risks of which were not told him, or who has not yet obtained the requisite skill or experience in such an activity. To be sure, liability may arise here for those who familiarized him with his task but acted irresponsibly doing so.

Liability also arises only if the person responsible could have prevented the danger under the given conditions in the first place. In the liability in causing environmental danger, so-called combined forms of guilt may apply, which are a mix of intention and negligence. Duty violations on purpose may come combined with negligently causing a common danger or a serious health damage or the death of a person or several persons. There may also be crimes committed on purpose causing a common danger exclusively, yet also negligent violations of duties that negligently produce a common danger. In conformity with these legal principles, legal liability is rendered specific in the law in the case of certain violations of legal obligations.

On Raising Legal Liability

On behalf of an effective legal protection of people's life and health, a higher legal liability attaches to serious cases. This applies to

- causing a common danger on purpose;
- negligently causing serious health damage or the death of one or several persons;
- inconsiderate violations of the provisions for the protection of the ground, the water or the air; and
- an especially irresponsible violation of cautionary obligations to social fellowship.

In serious cases, a prison sentence threatens, which may run for 8 years in the most serious cases.

In criminally causing environmental danger, the general provisions are in effect for sanctions in accordance with the facts of the case and for determining the measure of penalties. Extra penalties may also be pronounced, such as proscribing certain activities (Article 53, Penal Code). An offender may be barred from the exercise of his occupation temporarily or permanently, if he committed his violation by grossly infringing his work obligations, e.g., if he was drunk while he committed his violation or neglected elemental work obligations such as the required checking of installations for their operational safety or gross negligence in reading metered values, or when the environmental dangers were caused by faulty project planning or faulty installation or aggregate construction. He may also lose permits, for handling poisons, for instance.

An extra penalty may be a monetary fine. It always depends on the grade of seriousness and the consequences of the act, the degree of the environmental imperilment, health damage and a possible fatality or several. Economic aspects are important, too, e.g. endangering public supplies in vital commodities. Consequences must always be regarded as part and parcel of the guilt.

Penal measures do not cancel legal sequences in consequence of other legal provisions. Dust or exhaust dues, the obligation to make good for economic injuries or paying damage to agricultural or forestry enterprises, indemnities or compensation for emissions, e.g., may continue in effect.

FOOTNOTES

1. G. Mittag, "Direktive des X. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1981 bis 1985," Berlin, 1981, p 61.
2. Cf. S. Heger, "Tenth SED Congress Continues Basic Line for the Well-being of the People," NEUE JUSTIZ, 1981, No 5, p 194.
3. Cf. W. Kirchhoff, "National Front and Socialist Legality," NEUE JUSTIZ, 1981, No 5, p 197; H. Krueger, "Survey Results on Enforcing Municipal Ordinances," Ibid., 1981, No 4, p 168; W. Herzig, "Measures on Further Strengthening Order and Security in Magdeburg," Ibid., 1981, No 3, p 119; H.-J. Semler, "On the Responsibility of the Local People's Representations in Ensuring Socialist Legality, Order and Security," Ibid., 1981, No 1, p 17.
4. Cf., e.g.,
 - 1st DVO (Implementation Decree) for the LKG (Land Management Law) -- "Protection and Preservation of the Flora and Fauna and the Beauty of the Landscape"-- Nature Protection Decree--14 May 1970 (GBL, Part II, No 46, p 331);
 - 2nd DVO for the LKG -- "Projecting, Maintaining and Developing the Landscape for Recreation"--14 May 1980 (GBL, Part II, No 46, p 336);
 - 3rd DVO for the LKG -- "Keeping Towns and Communities Clean and Using Residential Refuse"--14 May 1970 (GBL, Part II, No 46, p 339);
 - 4th DVO for the LKG -- "Protection Against Noise"--14 May 1970 (GBL, Part II, No 46, p 343);
 - 5th DVO for the LKG -- "Keeping the Air Clean"--17 January 1973 (GBL, Part I, No 18, p 157);
 - 6th DVO for the LKG -- "Utilization and Harmless Elimination of Waste Products"--11 September 1975 (GBL, Part I, No 39, p 662);
 - Law on the Protection, Use and Maintenance of the Waterways and on Flood Protection (Water Management Law)--17 April 1963 (GBL, Part I, No 5, p 77) and the Decree on Handling Substances Harmful to Water (Decree on Water Pollutants)--15 December 1977 (GBL, Part I, 1978, No 3, p 50);
 - GDR Mining Law, 12 May 1969 (GBL, Part I, No 5, p 29);
 - Law on Handling Poisons--Poison Law, 7 April 1977 (GBL, Part I, No 10, p 103);
 - Law on Atomic Energy Use in the GDR--Atomic Energy Law--28 March 1962 (GBL, Part I, No 3, p 47);
 - Decree on the Protection of Agricultural and Forest Lands and the Protection of Socialist Soil Use--Soil Use Decree--26 February 1981 (GBL, Part I, No 10, p 105);
 - Radiation Protection Decree, 26 November 1969 (GBL, Part II, No 99, p 627);
 - Decree on the Transportation of Dangerous Goods, 8 July 1980 (GBL, Part I, No 22, p 217).

5. These are funds the bezirk councils allocate to the towns and communities for accommodation and adaptation measures. Moreover, enterprise managers are duty bound to analyze the causes of emission limit infringements and to inform the local councils on the results of their analysis and the measures taken to respect the limits.
6. On 1 July 1980, the 18th criminal law amendment--Law on Controlling Environmental Crime--of 28 March 1980, came into effect in the FRG. Even though this law inserts a new section, "Crimes against the Environment," in the Penal Code, which enlarges the liability in environmental protection and some liabilities were removed and modified in laws not parts of the Penal Code, there is doubt about the expediency of these regulations respecting the serious injuries inflicted on the environment due to corporate interests and profit greed. Cf. also "FRG--Protection for the Polluting Corporations Instead of Environmental Protection," NEUE JUSTIZ, 1980, No 12, p 551.
7. The water management law provisions were rescinded in accordance with Article 3 in the second penal code amendment.

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POLAND

COASTAL AREA THREATENED WITH ECOLOGICAL DISASTER

Warsaw PRZEGLAD MORSKI in Polish No 4, Apr 81 pp 49-53

[Article by Anna Sobczak]

[Text] Three regions in Poland are threatened with exceptionally great, constantly growing ecological disaster. These are the Silesian mining-metallurgy region and the two industrial centers at the estuary of the two largest and most heavily polluted rivers, which carry sewage from practically the entire country to the sea: Gdansk and Szczecin.

A report on this subject, the eastern coast, was presented in 1973 by the Gdansk WRN [Provincial People's Council] Presidium to the chairman of the Council of Ministers, among others. The waters of the Gdansk and the Puck Bays, as well as those of the Wisla Bay, for all practical purposes should be closed to tourism and the economy, for they constantly threaten people with the eruption of an epidemic of diseases. The report speaks of the radioactive properties of phosphorous-gypsum stored under Gdansk by the municipal Phosphorous Fertilizer Plants. Dust from the Siarkopol Plants and refinery gases are transforming the marshy soils on the left bank of the Wisla, until recently fertile, into a wasteland.

Reports on the coastal natural environment reaching the press from time to time are only fragmentary. Hence, it is time for us to present a more complete picture of the situation.

The Bay

There is still that glimmer of hope that permits us to say that "not everything had died" in the waters of the Gdansk Bay. One wonders how some forms of life still exist in it, since it bears all the marks of an ecological disaster. In places its bacteriological pollution exceeds the admissible contents of pathogenic bacteria in open waters 1,000-fold. The sudden increase in salts [text reads "coli" for "soli"] causes us to assume that the amount of bacteria appearing in conjunction with them is also growing, causing such human diseases as dysentery. The cause of this is, above all, the lack of biological sewage-treatment plants in the Gdansk region. As a result, the Tri-City area alone is forced daily to dump approximately 220 water-wagonfuls of municipal sewage that has been treated only mechanically

into the sea. Puck dumps over 3,000 m³ of completely untreated sewage a day and Jastarnia, 100 m³.

In addition to the bacteriological threats in the bay are threats of a physical-chemical nature. They are present in the water as highly poisonous organic and heavy metal compounds, primarily mercury, lead, cadmium and arsenic, in amounts exceeding the allowable norms many times over. The sea contains more and more detergents and petroleum-derived substances. The Wisla is their major source (70 to 96 percent), followed by ports, shipyards, marine transport, local industry and the municipal economy.

The consequences of the stream of poisons flowing unobstructedly into the Baltic has already been described. The Tri-City beaches are closed. Eels are dropping off in large numbers; the tide washes them onto the land by the thousands; they are rotting, threatening the eruption of an epidemic. Salmon trout and salmon are disappearing, and the herring are becoming diseased. Cod, which feeds on the poisonous sewage, is becoming the carrier of many diseases. The presence of mercury, lead, cadmium, arsenic, zinc, copper and iron compounds as well as polychloric pesticides (occurring in plant pesticides) hazardous to human health has been detected in cod muscles and liver. Entire varieties of marine plant life are perishing. Aquatic bird life is being killed off by the so-called oil plague.

The state of inland waters of the Gdansk coast is somewhat better (if we do not include the Wisla). Nonetheless, since 1973, when the WRN report appeared, their state has decidedly worsened. Six years ago, of the 1,400 kilometers of the 8 most important rivers in the Gdansk Voivodship, 810 kilometers were of class 1 purity (suitable for consumption and the raising of salmon trout), 440 were of class 2 purity (suitable for bathing) and 150 kilometers were of class 3 purity (designated solely for the needs of industry and serving agriculture). In 1978, the lower section of the Wisla finally lost its class 2 status. A year later, of the 1,400 kilometers of coastal area rivers, only 730 kilometers were class 1 waters.

Meanwhile, waters rapidly began to develop, which when tested for quality would have to be put into a new category of waters, class 4 or class 5 purity. This refers to the Wierzycia from Stargard to the Radunia estuary, with numerous water intakes for the Tri-City, among other waters. In 1975 these Wierzycia waters were practically crystal clear, while in places it waters are of class 3 purity.

The state of lakes is relatively good. Of approximately 600 lakes, only a few have become totally polluted (including the Karczemne and Klasztorne Lakes near Kartuzy and the Wierzysko and Grabowskie near Koszierzyna), caused by the introduction of untreated municipal sewage. A number of lakes are losing their class 1 purity and are becoming class 2 waters (including the popular Malsz Lake, due to nearby vacation spots, which for the most part are not generally equipped with treatment plants).

The major cause of inland water pollution is the increase of marshy elements in them with nitrogen, phosphorous; i.e., nutriments for field plants. The

consequence of this is the phenomenon of autotrophy, the rampant development of plant life. When the plants have drawn the oxygen from the water, they quickly decay and die. No less a menace is the untreated sewage eliminated by farming, by plants serving farming and by local industry. Small streams and canals that are not catalogued and controlled are also a menace; production waste materials from POM [State Machine Stations], dairies and private farms are illegally dumped into these waters.

Creeping Poisons

A considerably greater ecological threat to the coast than the purity of inland waters is municipal and industrial waste. The construction of suitable dumping grounds is extremely costly and, in the case of Gdansk or Gdynia, it is practically impossible due to the lack of space. Meanwhile, overloaded storage sites for wastes threaten the contamination of subterranean waters, which are a current source of drinking water for the coastal area.

The best (and perhaps the only) solution to the problem of liquidating municipal waste is the construction of a modern trash incinerator. While this would cost still more than regular dumping grounds, its costs would be returned rapidly. This is because incineration produces energy, construction materials and sought-after heavy metals.

A more difficult problem is the liquidation of industrial waste. At the GZNF [Gdansk Phosphorous Fertilizer Plants] storage sites, over 7 million tons of phosphorous-gypsum have been collected over the 12 years of the plant's existence. Approximately 800 tons are added to this monthly. In such a mass, they may possess radioactive properties. They are already causing diseases among humans, cattle and poultry and they are exhausting the marshy soils. Noxious compounds penetrate deep into the soil, spreading in all directions at a rate of 20 meters a year. Meanwhile, scarcely a few kilometers from the storage site is a water intake for the southern sections of Gdansk. Thus, if within 2 years the Ministry of the Chemical Industry does nothing toward liquidating the phosphorous-gypsum storage site, GZNF must be closed.

Of equal urgency is the construction of a group of storage bunkers for industrial waste with strong toxic properties. The 32nd proposed site for dumping grounds for Tri-City electric power and heat-generating plants has been rejected, since like the 31 former sites it presented an ecological threat. Thus, ashes are dumped into a former lake in Letnica, which itself is of a limited capacity and will soon be filled. Much points to the fact that the ashes will have to be transported to a place several tens or hundreds of kilometers away. Then the transportation itself will cost more than the entire present cost of the electrical power and heat produced for the coast.

We Can Still Breathe

Since 1973, there have been a 40 percent increase in dust emissions and an increase in gases of a little over 130 percent (in view of the 1,000-fold increase in water pollution). Moreover, this menaces only relatively small

areas surrounding the polluters themselves: Siarkopol, GZNF, electric power and heat-generating plants, the transshipment port for apatites and some obsolete production plants such as Fala, Olowianka and the gasworks in Gdansk. Each year these enterprises emit several hundred tons of poisonous compounds: sulfur dioxide, fluorine, nitrogen and hydrocarbons, as well as twice this amount of dust from heating plants. They are a nuisance to the monuments in Gdansk's Old Town. The air pollution over Sopot and Stargard is growing, due to the excessive number of small boilers in these cities. The cause of this pollution is primarily the lack of dust extractors (electrofilters and cycle dust extractors) on the market, the inefficiency of the existing treatment equipment in a number of plants (primarily in GZNF) and the poor quality of heating fuel.

The problem of transportation pollutants to the atmosphere must be treated separately. They are especially hazardous to human health because they contain a lead compound. After only an hour of exposure, they cause symptoms of poisoning in militiamen controlling traffic at the intersections of main Tri-City streets, which attests to their very high concentration. Meanwhile, inspections conducted by the UW [Voivodship Office] Environmental Protection Department at transport bases invariably show that over half of all truck motors have inefficient carburetors and exhaust systems. Thus, we must build beltways more quickly, among other things. The Tri-City beltway has awaited a second highway for years, as well as decent approaches to city centers.

What Should Be Done?

What we should do, and when, to halt the progressive pollution of the environment in the coastal area is something we have known for a long time. The corresponding programs, prospects and detailed calculations have been in the hands of the Voivodship Office for many years. The question is only, Who is to do this and why?

During the next 10 years, it is indispensable that we build the following for water pollution control: The Wschod (1 billion zlotys), Debogorze (450 million zlotys) and Swarzewo (380 million zlotys) biological treatment plants, the Tczew treatment plant (390 million zlotys), the GZNF treatment plant (700 million zlotys) and a sewerage system for Gdynia-Orlow (200 million zlotys). Of secondary importance according to the priorities are biological treatment plants for Stargard and Koscierzyna; a sewerage system for the livestock feeder farms in Strzebielina, Niedamowo and Grabowo; and a Morena sewage collector to protect water intakes in Straszyno.

With regard to protecting the atmosphere, we must first liquidate small boilers and obsolete plants. Moreover, we must build equipment for limiting the emission of fluorine from GZNF (200 million zlotys), for the airtight sealing of transshipments of sulfur (50 million zlotys) and transshipments of apatites in the Gdansk port.

Investments linked with the liquidation of industrial and municipal waste will be considerably more expensive. Solving the phosphorous-gypsum problem

will cost approximately 1 billion zlotys. The cost of building a storage site for EC-III in Gdynia will be as much as 1.3 billion zlotys, and that of building a storage site for EC-II will be nearly 400 million zlotys. A trash incinerator will cost 300 million zlotys.

In other words, in order to compensate for the many years of neglect and in order to barely check the process of the destruction of the natural environment of the coast, in the course of the next 10 years we would have to do work costing 20 billion zlotys. The allocation of 2 billion zlotys "for yesterday" to complete the Wschod and Debogorze treatment plants and the construction of Swarzewo is wholly indispensable. Meanwhile, the voivodship has received several tens of millions of zlotys for this purpose, in addition to which processing capacities are insufficient.

Thus, the fatal errors in investment planning and in the distribution of funds for particular tasks are bearing consequences. We have built new foundries, ports, refineries and opera houses, we have rebuilt castles, at the same time cutting down the branches on which the biological security of inhabitants hung. Today it is difficult suddenly to allot several tens of billions of zlotys to protect natural surroundings. But the whole drama of the situation lies in the fact that these funds must be found to give us strength and to get the country out of the crisis, so that we can live through the worst under the best conditions.

Investments linked with the protection of the natural environment should be first among the tasks that we must execute in the near future. They should be given at least the same priority as the food economy and housing construction. This opinion must be shared by all of the people and offices responsible for the future of the coast and the country.

8536
CSO: 5000/3009

HOSTILITIES AFFECT GARBAGE DISPOSAL, WATER SUPPLY

London AL-HAWADITH in Arabic No 1322, 5 Mar 82 p 44

[Article by 'Adnan Karimah: "Twenty Million Lebanese Lira To Clean Up Lebanon's Garbage"]

[Text] The war, now in its 8th year, has not prevented Lebanon from concerning itself with a major project involving the control of flood waters, waste water, and solid wastes. The thinking about it goes back to 1950 because of its connection with the lives of our fellow countrymen, especially after life-threatening dangers resulted from sewage water mixing with drinking water.

Since such a project requires many studies and an army of experts as well as several sources of financing, something that takes a long time, the government decided through the Council for Development and Reconstruction headed by Dr Muhammad 'Atallah to adapt to the present reality imposed by the circumstances of the war and carry out small but urgent projects to dispose of garbage. It decided to build an incinerator with a capacity of 20 tons an hour in al-'Amrusiyah in al-Shuwayfat region, especially after the security situation made it clear that sometimes garbage could not be hauled from West to East Beirut where the first incinerator is situated in al-Karantina because the lack of a plant in the western section led to garbage piling up on sidewalks thereby affecting public health and polluting the environment.

An agreement was reached on building the 'Amrusiyah plant at a cost of about 20 million Lebanese liras in January 1980, with the expectation that it would be completed by mid-1982. The International Agency for Development shared in the purchase of some vehicles and essential equipment to move garbage from West Beirut to the new incinerator.

The garbage problem is tied up with another health problem--flood waters and waste water--which demands the devising of a plan to "cleanse" Lebanon of these hazards to public health. The Council for Development and Reconstruction was aware of this when it signed an agreement with the World Health Organization [WHO] in September 1979 to implement the plan whose objectives are to:

- (1) Compile a general orientation map of all Lebanese land;
- (2) Do basic engineering and feasibility studies and do special studies on pollution, ground water, and water quality and recommend immediate improvements;

- (3) Study possible sites for draining waste water;
- (4) Train the personnel needed to execute the plan.

After contacts were made with the development program of the United Nations, the latter (after reaching an agreement with the World Health Organization) commissioned an international agency to invite bids to study the plan jointly with experienced international companies. As a result of the study, six companies with the requisite qualifications were chosen. Lebanon selected one of them, the American firm (Kent, Draystar, McKay). This company worked with a joint Lebanese staff for 3 years during which time a plan for the greatest project in Lebanese history was completed.

The WHO was not satisfied with this alone, but requested the appointment of neutral experts to study and comment on the finished plan. It was agreed that these experts should discuss the plan for 2 weeks, the first week in Beirut and the second in the United States. The last day of the second week was the most important because an international conference was held last 22 January in the headquarters of the American company in Boston. It was attended by representatives of the International Bank for Development and Reconstruction, officials from the UNDP, WHO, AID, a group from the European Common Market, and Dr Muhammad 'Ata'allah. They studied the project, estimated to cost about 20 billion liras, and the possibilities of financing it through international banking institutions.

Dr 'Ata'allah said to the conferees: "We didn't come here to collect 'checks' to finance the project at the end of the conference. Rather, we came to tell you: This is what we have...You may find that strange, for you hear there is a war going on in Lebanon with fighting and killing...and we say to you: We are concerned at the same time to do all in our power to carry out construction and development projects for our country. The project before you is not just for a part of Lebanon but for all Lebanon. It may be the most important project to demonstrate the unity of the state to all the Lebanese."

The experts favored execution of the project. Likewise, the representatives of the international banking institutions showed their readiness to share in the financing. Dr Mahmud Salayman, representative of the WHO (for the Middle East), described the project as the first of its kind in the world because for the first time a state is offering a national plan to control flood waters, sewage, and garbage. It endorses this great project which is expected to take 10 to 15 years to complete. It is worth noting here that its cost in today's prices is about 20 billion liras (more than \$4 billion), but due to inflation in the years it will take to execute the project, the experts estimate the cost will increase to about 50 billion Lebanese liras, as Dr 'Ata'allah says.

We may reasonably conclude from this that the plan is long-range, but what is the first-priority stage to be carried out?

Dr 'Ata'allah answers: "While drawing up the plan we discovered very serious things that must be attended to without delay, e.g., places where sewage mixes with drinking water, a life-threatening danger to the public. We passed a bill on urgent projects that cannot be delayed. It turned out that they will cost \$200 million (about a billion Lebanese liras). "We are now concentrating on two elements:

(1) Creation of a staff on the Council for Development and Reconstruction to perform the functions of the central agency responsible for developing the project;

(2) Requesting the cabinet to allocate 300 million liras to begin executing the urgent projects. However, the remaining amount, i.e., about 700 million liras, is to be obtained from sources of international financing."

It appears that the program is being implemented swiftly. Dr 'Ata'allah comments: "In a month and a half the required staff will be in place. We will then begin to receive blueprints for the urgent projects from the American company preparatory to studying them and beginning their implementation."

Some may criticize the implementation of such a large project that will cost billions of dollars while there are more important matters that threaten our fellow countrymen every day under the circumstances of war and they may be more deserving of financial support! But it must be admitted here that the war has revealed large and important "weak spots" in Lebanese life. It is clear that the state was laggard in previous years in ensuring the minimum requirements of this life, something that demands short and long term plans that include many of the construction and development projects that interact with the energy and daily work of our fellow countrymen. While they are managing well with food and drink, the state must be alert to their health, whether they are sick or well, because true development is development of the human element, the basis of all development work and in all kinds of fields!

5214

CSO: 5000/4706

MOROCCO

POLLUTION PROBLEM NOTED

Rabat ALMAGRIB in French 7-8 Feb 82 pp 1-2

[Text] Pollution of the city of Mohammedia has reached the danger point.

Mr Taieb Bencheikh, an independent representative and former minister of planning and regional development, sounded the alarm during a round-table discussion organized by the association of former students of the city's educational establishments.

Emergency Plan Necessary

Mr Bencheikh was not satisfied just to point out the seriousness of the problem; he also stressed the need to establish an antipollution program as soon as possible.

Mohammedia has not made the transition from a seaside resort to an industrial center as wisely as it should have. Thus it has become an industrial producer, but especially a big producer of pollution and harmful waste, almost without anyone being concerned about the damage caused.

Referring to a field study conducted under the supervision of and in cooperation with Mr Mustapha El Moudden (chairman of the Parliamentary Commission on Industrial Plants), Mr Bencheikh recalled the drawbacks of concentrating large power plants in Mohammedia. Mr Bencheikh noted that the city actually contains 40 percent of the national oil stock and the largest electric power plant in the kingdom (50 percent of national consumption).

Mr Bencheikh also pointed out that following a series of contacts with the directors of the city's various petrochemical plants and factories, it was confirmed that antipollution measures are nonexistent or ineffective. This is also the case of protective measures against fires or accidents.

The danger is not just for the city of Mohammedia alone, as the situation is similar for all coastal cities in the area.

Preventive and protective measures are lacking everywhere, in fact. Like Mr Bencheikh, we need only recall the explosion which occurred on board the Iraqi oil tanker "Al Moutanabi" off the coast of Mohammedia, and the weak effort to combat the ensuing disaster, to be convinced of this.

Equally, if not more, serious is the fact that even Casablanca is threatened and has no recourse.

When asked about these problems during the discussion, the minister of energy could only confirm Mr Bencheikh's statements.

The threat exists; it is real; it is serious; it may be disastrous. But the minister of energy, visibly embarrassed, had no recourse other than to change the subject.

As though neither he nor the government were concerned.

So then, who should be concerned about this?

11915

CSO: 5000/5010

PROFESSOR SEES INCREASED THREAT OF 'ACID RAIN' FOR NORDICS

Helsinki HUVUDSTADSBLADET in Swedish 9 Mar 82 p 4

Article: "Acidification Threat to Forests and Waters"

Text The acid rain over our forests--the precipitation of sulfur from primarily oil and coal-burning installations--sooner or later threatens to affect the forests and lumber production. The question is only: when? Additional research is needed in this area.

"For a short period the sulfur causes growth in the forests, but this is purely a 'dope effect,' for production drops after a few years." This was said by Prof Carl Olof Tamm of the College of Forestry in Sweden, when representatives of forestry and forest research discussed the acidification problems some time ago at a Nordic conference in Falun.

Acidification of the woodlands is worrying the Swedish Forest Service, among others.

"We must act early in order to turn the development around," director-general Lennart Schotte emphasized at the conference. "International conventions must be established in this field."

Joint Opinion

"It would be good if we could establish a joint forest opinion. First in the Nordic countries, then in all of Europe. Forestry must take an active role," says director-general Lennart Schotte. "The acidification has a creeping negative effect on the productive forest areas."

Acidification is a problem which transcends borders, it says in the conference resolution. It is clear that a large portion of the acid rain over Scandinavia comes from industrial regions on the European continent and in Great Britain.

The problem is worst in the southwestern parts of Norway and Sweden, where the natural resistance of the ground is lowest due to the nature of the underlying rock. Nordic foresters hope that their colleagues in European forestry will cooperate in working to clarify the causes and effects of the acidification.

"At the same time we ourselves must prevent additional acidification of the soil and water," it was stressed at the conference. "In a longer perspective the supply of future generations is threatened if we do not act now."

Emissions Must Be Attacked

"The emissions must be attacked at the source," it says in the Falun resolution. And the sources are primarily combustion facilities for oil and coal. If the discharge of air pollutants were to decrease, several direct-acting damaging effects could be avoided.

In his address Prof Folke Andersson of the Institution for Ecology and Environmental Protection of the Swedish College of Agriculture stated, that there is a clear connection between the quality of the forest lands and the basic status of the soil, and there is also indication that biological activity in the soil decreases with continued acid rain.

"The acid rain leads to a decrease of the supply of basic cations in the soil. In the long run, in particular as regards the upper soil layer, this means an acidification which affects the organisms and their activity. In a longer time frame the result is a reduced supply of nitrogen. In all probability this will not be compensated for by the now increasing nitrogen precipitation. It is most likely that we must anticipate reduced forest production. When this will occur and the extent of it is difficult to predict. Research is being concentrated on these issues," Professor Andersson said.

The continuing acidification also involves waters, in particular small lakes with a low nutrition level. The result can be that the number of species of algae and water plants decreases, as well as the stocks of fish.

Soil acidification can only be stopped by limiting air pollution. For the lakes liming may be a neutralizing aid--but it gets costly in the long run.

The villain in the acid drama is the small hydrogen ion, which has acidifying properties. When the concentration of hydrogen ions becomes too high, the pre-conditions for life of animals and plants change. The number of hydrogen ions is measured in pH. The greater the concentration of hydrogen ions, the lower the pH value. The normal value is pH 7.

11949
CSO: 5000/2078

FINLAND

GOVERNMENT WANTS ENVIRONMENT MINISTRY BY 1983

Helsinki HELSINGIN SANOMAT in Finnish 26 Mar 82 p 12

[Article: "Conflict on Environmental Ministry"]

[Text] The parliament is awaiting a new law on the establishment of an environmental ministry, which will divide opinions sharply within the parliamentary factions. Interior Minister Matti Ahde (Social Democrat) talked about the establishment of an environmental ministry in the parliament on Thursday. It is hoped that the work of the ministry will begin in the beginning of next year. At an inquiry session in the parliament Matti Ahde answered Conservative Party's Eeva-Maija Pukkio's question concerning environmental administration.

According to Ahde the establishment of an environmental ministry is an especially urgent task.

"The intent of the government is that an environmental ministry could begin its work next year. For this reason the government will bring up questions in principle concerning this issue for resolution by the parliament in the very near future," stated Ahde.

Ahde explained that the government has two alternatives: the establishment of an environmental ministry will be brought before the parliament either in connection with the supplementary budget or a decision will be made on the basis of a government report.

"The government will present this issue to the parliament in the spring and hopes that the parliament will be able to give an answer in the spring so that decisions concerning the establishment of an environmental ministry can be included in the 1983 budget," emphasized Ahde.

A Rare Report

Most likely the method for discussing an environmental ministry will be a government report. It is intended to bring it up for committee discussion in the parliament.

In recent times a government report in the parliament has been rather rare. All in all governments have presented the parliament with approximately 30 reports. The last report was in 1974 and it concerned energy issues.

Usually, a report concludes in a measure of government confidence. This time it is not intended that the report will measure government confidence, but it will apparently be brought up for discussion by the constitutional committee in the parliament and after that the parliament will make its own decision.

SDP and Center Party Opposing Each Other

Demands were made for an environmental ministry all through the 1970's. Its establishment was outlined in the initial phases of Kalevi Sorsa's (Social Democrat) first government.

The Social Democrats and the Center Party have opposed each other in this question. A similar situation is now emerging.

Among the large parties the SKDL [Finnish Peoples Democratic League] and the Conservative Party in addition to the SDP have promoted the establishment of an environmental ministry in various connections. But, for example, there is also another feeling in the Conservative Party.

A conflict concerning principles is emerging with respect to the area of jurisdiction for the new ministry. Center Party Chairman Paavo Vayrynen submitted to the idea of a ministry last fall, but explained his position by stating that he meant a rather narrow form.

The conflict continues on this basis even now. The Center Party is promoting the narrowest alternative, the SDP the broadest.

Among the alternatives presented to the parliament the broadest concerns a model according to which the environmental protection section, the planning section, and the housing office of the Interior Ministry as well as conservation and water management affairs of the Agriculture and Forestry Ministry would be turned over to the environmental ministry. The Center Party has carefully protected the interests of the Agriculture and Forestry Ministry by striving to keep its area of jurisdiction intact.

According to another alternative housing affairs would remain outside of the environmental ministry, but planning affairs would be included.

According to a more narrow alternative neither housing nor planning would be turned over to the environmental ministry.

Environmental protection affairs will apparently come up next for discussion by the ministerial committee on area, community, and environmental policies.

The SDP's parliamentary faction took a stand on an environmental ministry on Thursday. The faction urged the immediate establishment of the new ministry and hoped that the issue would be brought before the parliament as soon as possible.

10576
CSO: 5000/2087

STUDY CONFIRMS HARMFUL ENVIRONMENTAL EFFECTS OF PEAT FUEL

Helsinki HELSINGIN SANOMAT in Finnish 25 Mar 82 p 6

[Article by Jyrki Maunula: "Study Surprisingly Confirmed That Peat Pollutes Atmosphere"]

[Text] Hameenlinna--The use of peat as a fuel is not at all as recommended as has been thought so far. According to a study peat contains and disseminates alarming amounts of sulphur into the atmosphere when burned as a fuel in thermal power plants.

The study, which was just completed, discloses that 30-percent contents have been found in peat from Finnish bogs, amounts of 10 and 20 percent are usual.

The average amount of sulphur in heavy fuel oil is 2.3 percent. According to the stipulations sulphur contents exceeding 0.3 percent must be report on a product label.

We do not do this for the simple reason that no attention is given to explanations concerning the amount of sulphur. Purchasers of peat are only primarily interested in the decomposition of a bog and in the ash content of peat.

"Now that the amounts of sulphur are known, immediate agreements should be reached so that plants burning peat would not emit sulphur in the vicinity of housing. In addition, every bog which is to be exploited should be carefully analyzed in advance," states Doctor of Agriculture and Forestry Erkki Kellomaki, environmental protection inspector of the Hame Provincial Government. In his opinion those bogs in which uranium or other detrimental minerals have been observed should unconditionally be placed under an excavation ban. (In certain tests the uranium content in peat was 0.8 percent, and the content in the ash was 1.5 percent.)

Finland Is Sweden's Guinea Pig

The peat study on Finland's bogs, which has caused a commotion, was conducted by researchers Satu Huttunen and Marketta Karhu of Oulu University. The study was funded by the Swedish Environmental Protection Office.

This is apparently a Swedish desire to obtain research information before they themselves begin the burning of peat. We began using peat during the

war almost without any preliminary studies on any possible detrimental effects," states Kellomaki.

Kellomaki states that he was astonished by the results, which disclosed the percentages of sulphur:

"Peat is definitely more detrimental than heavy fuel oil, which has been subjected to abuse."

The Deeper The Worse

From the report by Huttunen and Karhu it becomes apparent that sulphur contents in bogs increase in general the deeper it becomes necessary to dig for the peat. On the surface of a bog the sulphur content is only about 1 percent, at a depth of 3 meters it is frequently doubled, and at a depth of 5 meters it is 9--10 percent.

Contents of 30 percent were found from bogs along the coast of the Gulf of Bothnia, the so-called sulphide and alum areas.

The study also indicated that the string bogs in northern Finland have higher sulphur contents than the raised bogs in southern Finland.

"Apparently, peat should be dug from the raised bogs and only from the surface layers."

The demand clearly conflicts with practice: the country's northern bogs have been exploited the most and the intent has been to go as deep as possible, all the way down to the decomposed layers of peat.

"We have apparently been rather wide eyed in our enthusiasm to develop domestic energy. This has commenced without sufficient studies. Everyone has thought that peat is free of pollution and is the best to burn."

The sulphur in burned peat changes into sulphur dioxide and pollutes the environment. It has exactly the same negative effects as the sulphur in oil: the soil and water systems become acidified. Sulphur pollution kills vegetation and fish.

Danger of Cancer From Emissions

Satu Huttunen also wants to add that in his opinion attention should also be given to the emission of particles caused by incorrect burning of peat.

"Above all, the proportion of polyaromatic hydrocarbons should be determined since it is known that they are carcinogenic in people."

Huttunen hopes that this study would initiate a constructive discussion on the apparent detrimental effects of peat and would result in the necessary decisions. If peat burning plants are not located at a distance from housing areas, their smoke stacks should be equipped with an air purifier. In addition, the smoke stacks should be sufficiently tall.

"The situation will become even worse since the surface layers of peat bogs already being exploited are becoming exhausted and it is becoming necessary to dig deeper into the lower strata where sulphur and metal contents increase drastically."

In Kellomanki's opinion it is worthwhile even thinking about conserving Finland's bogs until the time when the world's oil reserves are indeed exhausted.

"In the interim we would be able to analyze our bogs thoroughly and develop technical procedures for making their exploitation safer."

According to him the emphasis in the use of domestic energy should be turned toward the use of biomass. Twigs and branches as well as fast growing willows are renewable natural resources and they do not contain near the amounts of metals or sulphur as peat.

Peat Was Thought to Be Safe

"It is quite a surprise to learn about such large contents of sulphur," states Section Chief Olli Ojala of the Environmental Protection Section of the Interior Ministry. He states that we have thought that there is very little sulphur in peat, less than 1 percent.

"However, much depends on the type of sulphur in peat."

According to Ojala in implementing a new air protection act the sulphur content of peat must be taken into consideration: before peat is allowed to be used as a fuel, a clarification must be made with respect to its composition.

Sulphur Limits to Be Determined

Interest in the emissions of power plants using various fuels should be expressed in other places also. A work group set up by the Ministry of Trade and Industry is in the final stages of its own study and will have its report ready by this spring.

The work group preparing the air protection act, which will come into effect in the fall, has become involved in this matter. Apparently, permissible limits for emissions of pollutants will be included in the law. This is also already partly required by those international agreements approved by Finland in which permission has been given to inspect pollution-bearing clouds moving from one country to another.

10576
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FINLAND

BRIEFS

HAZARDOUS WASTE PLANS FIRMED--The plan for the construction site of a future hazardous waste plant has been confirmed in the Interior Ministry. The ministry has also decided that the plan will be implemented in spite of possible protests. The City of Riihimaki can now determine the division of building lots for the area, after which the lot for the hazardous waste plant will be noted in the registry and a construction permit can be issued for the plant. The goal of Suomen Onglemajate Oy [Finnish Hazardous Waste Company] is that the plant will be operational by December 1984. However, construction may be delayed by several months. It is doubtful that the municipal government of Riihimaki will confirm the division into building lots before an appeals period of 1 month has passed since the ministry's decision. The highest court of administration can stop the implementation of the plan because of possible complaints. Inasmuch as the ministry's decision remains in effect, the division of building lots and the registration of the lot will move quickly since there is only one lot in the whole area and the city has agreed to treat the issue of the hazardous waste plant with haste. In addition to a construction permit, the hazardous waste plant will require a permit for the treatment of waste, which will be issued by the Hame Provincial Government. The company has already submitted an application for a waste treatment permit to the provincial government. A decision will be made next fall. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 27 Mar 82 p 10] 10576

BACTERIA, POLLUTION DESTROYING FISH IN LAKE MALAREN

Lake Feeds Stockholm Water Supply

Stockholm SVENSKA DAGBLADET in Swedish 24 Mar 82 p 8

[Article by Ola Sall]

[Text] The same kind of water deterioration that killed off life in Laholm Bay has struck the northern part of Lake Malaren, where fishing has declined sharply. The water is brown in color and smells bad.

Coliform bacteria and pollution have increased sharply. It is the lake system extending from Staket up to Ekoln, near Uppsala, that has been affected. Analyses of the water from Skofjarden show that the water is seven times browner than normal Lake Malaren water.

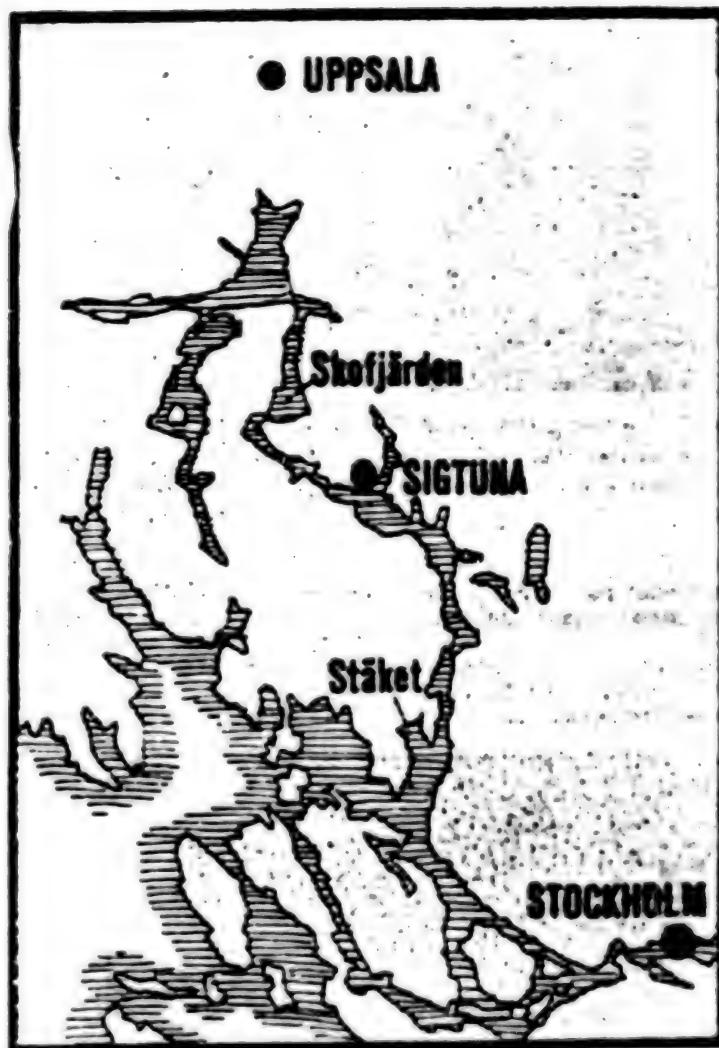
The iron content is 10 times higher than normal. Phosphate content, which in the rest of the lake stands at around 20 milligrams per cubic meter of water, is three times as high in the inlet. And the content has been gradually increasing over the past 5 years.

The municipality of Upplands Bro has asked the County Government Board for a report on the steps the latter has taken to combat the water's deterioration.

The County Government Board has replied that the National Environment Protection Board's water laboratory has been called in and that the National Environment Protection Board will submit a report later this spring to the Malaren Committee, a joint consultation organization that advises county government boards around Lake Malaren.

The waterworks in Gorvaln, which supplies northern areas of Greater Stockholm, has been forced to take special steps to cope with the deteriorating water quality. One such step has been to increase the amount of active carbon it uses to remove the smell and taste.

Waterworks officials give assurances that the drinking water has not been affected.



Water deterioration may be due to the leaching of fertilizer from farmland surrounding the Mälaren inlet. Unusually high levels of pollution have been encountered from Stäket up to Ekolsund near Uppsala.

"Catastrophic"

Folke Jacobsson, a chemist at the water laboratory at K-Consulting, the firm that was called in by a property owners association in Skofjarden, says: "The situation in the northern part of Lake Malaren is beginning to turn catastrophic.

"Life at the bottom of the inlet has sometimes disappeared completely.

"Before the waste water treatment process was improved 10 years ago, large quantities of phosphates from detergents were discharged into the lake. The phosphate settled on the bottom and lodged in the mud."

Fertilizers

Folke Jacobsson continues: "As long as the oxygen content in the lake remains normal, the phosphate stays in the mud. But when the oxygen content drops, phosphate and iron are released into the water."

Torsten Ahl of the National Environment Protection Board's water laboratory says: "One explanation may be the heavy amounts of precipitation in recent years, which leached fertilizers from the surrounding farmland."

When fertilizer gets into the water, the growth of algae increases. When the algae die, the oxygen in the water is used up, and more phosphate is released from the bottom.

Torsten Ahl does not believe that the Malaren inlet will die completely.

He says: "The character of the inlet has changed, but there is no reason panic. For example, the phosphate content was considerably higher in the 1960's, before sewage treatment was improved."

Fishing Halted After 35 Years

Stockholm SVENSKA DAGBLADET in Swedish 24 Mar 82 p 8

[Article by Ola Sall]

[Text] After 35 years as a fisherman, Rolf Nordwall is being forced to give up fishing and go to work in the forest. The pike-perch has disappeared from his fishing waters in Staket. The only thing that comes up in his nets is sticky algae.

Rolf Nordwall says: "Five years ago I began noticing that the water was getting worse and worse. But it has never been as bad as it was this winter.

"The algae used to bloom for a couple of weeks in the fall, and then I would have to stop fishing temporarily. This time, the nets were smeared with algae throughout the fall. All my fall fishing--about 1 ton of pike-perch--was ruined."

Rolf Nordwall believes that the pike-perch has gone out into Lake Malaren to get away from the cloudy water.

The supply of pike and vendace has also declined.

Rolf Nordwall normally sets 120 nets on a winter day. Now he sets out a few nets occasionally to catch fish for his own family's consumption.

Last Sunday he set out 12 nets. That would normally yield about 25 pike-perch. This time there were three pike-perch in the nets.

11798

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GOVERNMENT TO PROPOSE TOUGHER RESTRICTIONS ON EMISSIONS

Stockholm SVENSKA DAGBLADET in Swedish 3 Mar 82 p 6

Article by Bo Ostlund: "Government Proposal: Sharp Limit on Sulfur in Coal Burning"

Text The government will propose a sharp increase in sulfur filtration for future coal burning--a maximum of 600 tons sulfur will be permitted per plant and year in 1990.

It is also proposed that the coal industry should receive a new government subsidy for desulfurization installations, financed by a new surcharge on oil next year.

The government's sulfur bill now lies ready at the Government Office Building after having passed through the Coordination Office, since the creator of the bill, Agriculture Minister Anders Dahlgren, and Energy Minister Ingemar Eliasson earlier were not able to agree on the new environmental regulations.

The energy and industrial people at the government offices and at the Departments of Industry, Labor Market and Energy previously were not equally prepared to go as far in environmental demands as the Center Party with Anders Dahlgren at the head, who now comes very close to the discharge limits favored by the National Environmental Protection Agency. Last fall the Environmental Protection Agency demanded a maximum of 400 tons of sulfur per year and plant.

Stiff Opposition

The government's future sulfur levels will meet with stiff opposition:

- a) The Conservatives prefer that last year's parliamentary decision about 1,600 tons of sulfur annually in combination with liming measures for the prevention of acidification should become valid in order to speed up the introduction of coal.
- b) The coal and power industry (the oil companies, the Association of Heating Plants and the Swedish Coal Consortium, among others) has already warned the government in several statements against going too far with special Swedish measures; it might become difficult, among other things, to find a working

technology or alternatively enough low-sulfur coal.

c) The tenants' organizations and the Union of Local Authorities have warned of excessive increases in housing costs if the strict rules are allowed to take effect.

Social Democrats Also Oppose?

The Social Democrats' position is still an open question, but initial Social Democratic reaction to the requirements put forward by the Environmental Protection Agency in December, which the government now comes very near, is very negative:

"There is risk that it will become a very expensive way to make environmental gains," says Lars Liljegren, who is the Social Democrats' representative to the Oil Substitute Delegation and one of the party's experts on energy questions.

"In the Oil Substitute Delegation I have instead advocated that Sweden should stay with 1,600 tons of sulfur per year and plant, as the Riksdag recently decided, and in addition concentrate on desulfurization of oil, which is cheaper than desulfurization of coal, and increased liming of lakes and watercourses."

'PR Policy'

Lars Anderstig of the Tenants' National Association is bitter:

"We protest against the tenants' having to pay the costs of the additional filtering measures which the government plants to submit."

Anderstig calls the tough demands by the government and the Environmental Protection Agency an "international PR policy."

Two Steps

In the government's sulfur bill, which has been announced for 10 March, but which may be somewhat delayed having passed through the Coordination Office several times, the filtering demands are reinforced in two steps: 800 tons of sulfur will be permitted until the end of 1989; after that, the discharge of at most 600 tons of sulfur per plant and year will be permitted.

'Coal Fund' Results in More Expensive Oil

In order to aid the industry in building desulfurization facilities, a new state subsidy is proposed, financed by a new extra surcharge on oil--10 crowns per m³ oil--levied after 1 July 1983.

The new "coal fund" will be administered by the new Energy Agency.

In the sulfur bill the government also proposes greater efforts on liming. The responsibility for this is placed on the regional governments.

11949
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BRIEFS

WHO WARNS OF FUMES--Greater demands on emission controls for automobiles or a sharp decline in auto traffic in Stockholm. This is necessary if the nation's economy starts to grow again. Otherwise, the air over large portions of Stockholm's street network will exceed the limit values for air pollution set by the World Health Organization (WHO). This is the result arrived at by the state Automobile Emissions Committee in a study of the traffic and exhaust fume situation in the year 2000. If, on the other hand, the Swedish economy continues to stagnate with reduced automobile traffic as a result, the air quality requirements would be met without stricter emission standards. Regardless of what the traffic development looks like, stricter exhaust regulations would simplify traffic planning in Stockholm's inner city, analysts say. In at least two streets, Gotgatan and Stallgatan (near Grand Hotel), where tests were made, the levels of carbon dioxide and nitric oxides already today exceed the WHO's limits. Stockholm Street Commissioner Sture Palmgren (Conservative) is of the opinion that the exhaust fume problems are in the process of solving themselves in Stockholm. "In 5 years auto traffic in Stockholm has dropped 10 percent. The decrease will probably continue. The situation is not in any way critical," Palmgren says. "But of course I am in favor of improved emission controls." Text
[Stockholm SVENSKA DAGBLADET in Swedish 1 Mar 82 p 27] 11949

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